

CHAMP

USU CONSORTIUM
FOR HEALTH AND
MILITARY PERFORMANCE



ABOUT CHAMP

***USU Consortium for Health
and Military Performance***



Objectives

- **Introduce:**

- Human Performance Optimization (HPO) and the challenges confronting DoD

- **Describe:**

- Consortium for Health and Military Performance (CHAMP) and HPO vision

- **Discuss:**

- Current CHAMP activities and opportunities

- **Invite:**

- Feedback and comments





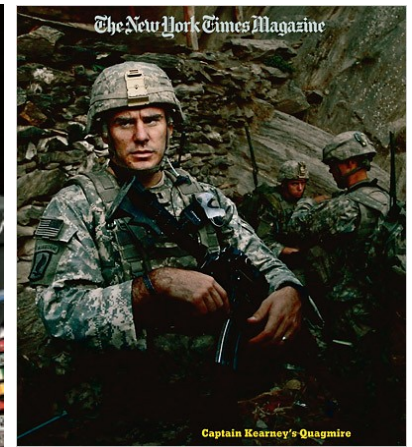
Challenges of Human Performance Optimization





The Post 9/11 Military and Human Performance

- **“The Long War”**
 - Unconventional Enemy
 - Generational Conflict
 - High Operational Tempo
- **“Humans are more Important than Hardware”**

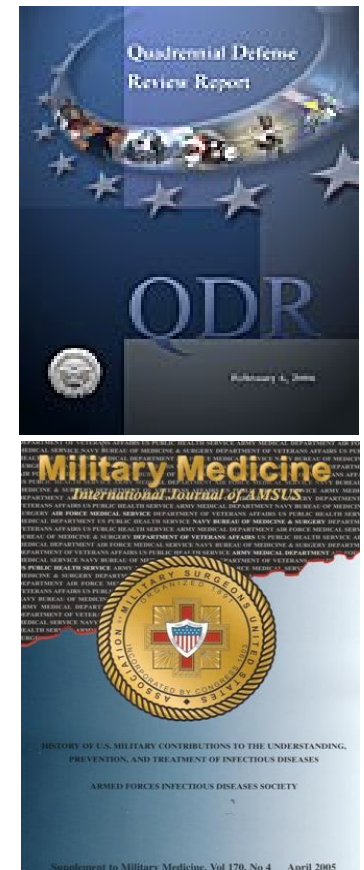




Human Performance Optimization and DoD

- **DoD Quadrennial Review 2006**
 - Identified need to promote warrior wellness and apply emerging technologies
- **Office of Net Assessment Report - 2006**
 - Critical need to further develop and understand components of HPO
- **USUHS Report to HA - 2006**
 - Held conference on HPO as tasked by HA
- **IPT Report from OSD/HA - 2007**
 - Convened to review USUHS report

Deuster PA, O'Connor FG, Henry KA, Martindale VE, Talbot L, Jonas W, Friedl K: Human Performance Optimization: an Evolving Charge to the Department of Defense. *Military Medicine* 2007;172(11):1133.





Outcomes of USU Conference and HA IPT

■ Urgent need to:

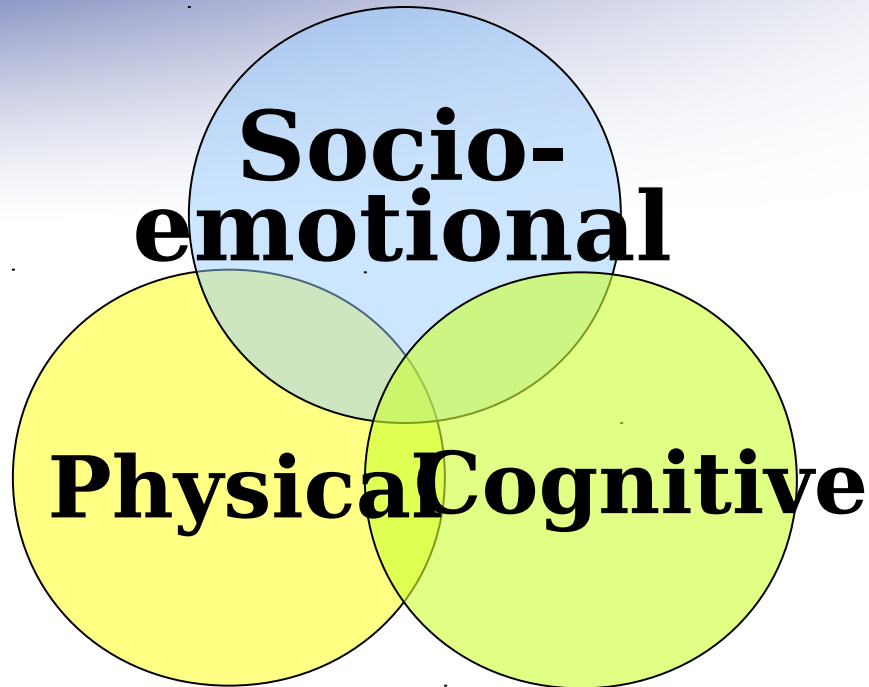
- **Define** HPO
- **Identify** valid HPO metrics
- **Translate** research into operational technologies
- **Improve** communication among medical, research, and operational communities

■ Program in HPO will:

- **Enhance** mental and physical resilience of warfighters
- **Reduce** injury and illness and support more rapid recovery
- **Improve** the human weapons system's ability to accomplish the mission
- **Allow** the US to keep pace with other countries



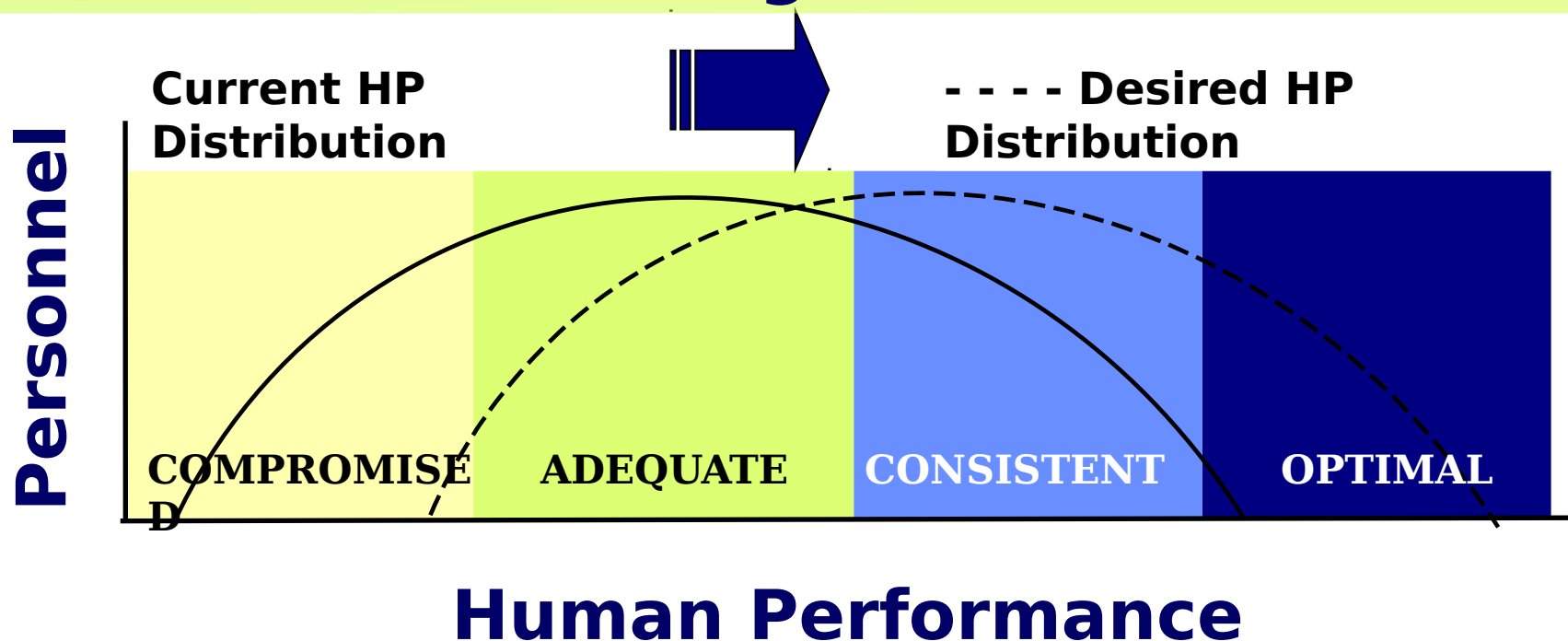
Components of Human Performance



“Optimizing human performance is defined as the process of applying knowledge, skills and emerging technologies to improve and preserve the capabilities of DoD personnel to execute essential tasks.”

USUHS HPO Model

Goal: Shift Performance Curve to the Right





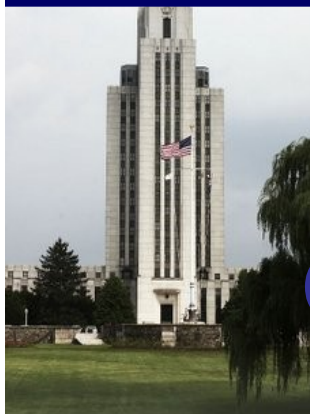
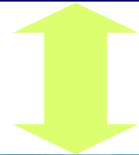
Bridge HPO Information Gap Via Communication



Academic
and
Research
Community



Joint Medical
Community



CHAMP
Clearinghouse



Leaders and
Operators



Vision and Mission Statements

".. to promote basic, clinical and translational research, education, and clinical expertise in optimizing the functional capacity of the warfighter, with the objective of maximizing performance in the operational environment."



"To be the premier medical resource in military unique human performance optimization."



Who are we?

- A group of educators, health professionals, and researchers dedicated to communication, cooperation and collaboration across boundaries to:
 - **Influence** policy based upon evidence
 - **Affect** organizational structure changes based on need
 - **Change** culture and training based upon translational research
 - **Improve** Force Health Protection and Readiness





MEMBERS

Military Advisory Board

Primary Care Evaluation
and Research Learning
Network

Injury Prevention
Research Lab
Dr. Beutler

Department of Neurology
Dr. Campbell

Human Performance Lab
Dr. Deuster

Cardiology Lab
Dr. Haigney

NCA Sports Medicine
Fellowship Program



CHAMP

External Review Board

Medical/Psychology
Laboratory Dr. Krantz

Bioenergetics Research Lab

Dr. Sharma
Muscle Physiology Lab
Dr. Kasper

Environmental Lab
Dr. Deuster

Biodex Lab
Dr. Talbot

Clinical Malignant
Hyperthermia Testing
Center
Dr. Muldoon



Partners

■ Military

- USSOCOM
- Air Force (AFRL)
- Navy (NMRC, NHRC, NEHC)
- Army (ARIEM, CHPPM)
- Marines



■ Civilian

- National Center for Human Performance
at Texas Medical Center
- Rand-Samueli Center for Integrative Medicine





Strategy

- USUHS CHAMP represents a National Capital Area (NCA) Consortium of health professionals, educators and investigators.
- The strategy is a collaborative effort among the operational, medical and research communities in:
 - Research: Basic, Clinical, and Translational
 - Clinical and Consultative Care
 - Educational/Evaluation Services





Basic, Translational, and Clinical Research

- **Conduct** research on genomic and proteomic biomarkers for susceptibility to:
 - **Heat Illness**
 - **Rhabdomyolysis**
 - **Exercise intolerance and fatigue**
 - **Exercise associated hyponatremia**
 - **Musculoskeletal injury**
- **Vett** ideas and proposed research specific aims





Clinical Consultative Services

- **Facilitate and coordinate** medical care for warfighters with unique HPO needs
- **Maintain** expert network
- **Provide** patient expertise in
 - **Exercise Intolerance**
 - **Rhabdomyolysis**
 - **Heat Illness**
- **Provide** electronic clinical consultation





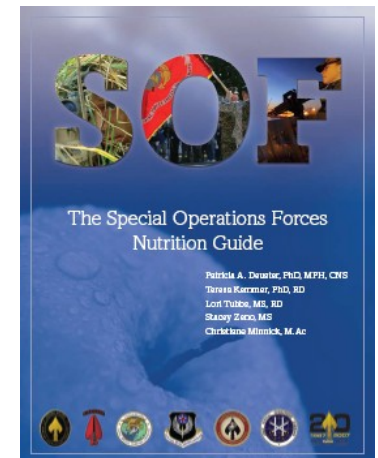
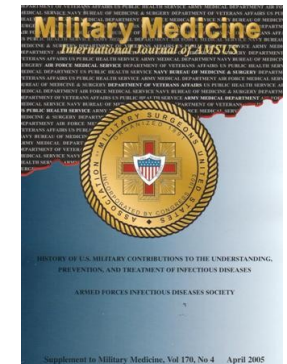
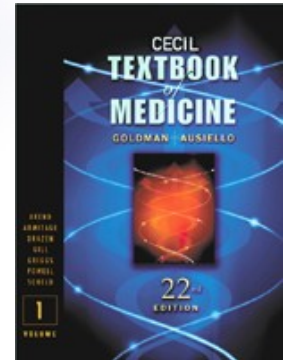
Educational and Evaluation Services

- “Learning to Care for Those in Harm’s Way”
 - **Integrate** HPO into USUHS Curriculum
- Partner and lead development of a DoD HPO Clearinghouse
 - **Maintain** a comprehensive, accessible repository of information on HPO
 - **Provide** educational and training processes for learning about and applying evidence-based HPO in practice
 - **Provide** systematic, responsive and dynamic processes for mission specific information exchange and training between warfighters/ commanders and scientific investigators on HPO



Publications

- Accepted for Publication (Selected):
 - “Human Performance Optimization: An Evolving Charge to DoD” *in Military Medicine*
 - “Heat Illness: Return to Duty Guidelines” *in Journal of the National Athletic Trainers Association*
 - Exertional Heat Illness, Exertional Rhabdomyolysis, and Malignant Hyperthermia: *in print: Current Sports Medicine Reports*
- Chapters (Selected):
 - Rhabdomyolysis. In Cecil’s Textbook of Internal Medicine 2007
- Textbooks:
 - USSOCOM: Special Operations Forces Nutrition Guide





Clinical Consultation

■ Patient Expertise

- Exercise Intolerance
- Rhabdomyolysis
- Heat Illness
- Dietary Supplements
- Nutritional Status



Research & Initiatives

- Exertional Rhabdomyolysis
- Step Test Project
- Enlyten Sports Strips
- Functional Movement Screening
- Heat Illness
- Botulinum Toxin
- ACSM Conference
- VCNO Project
- Updated Website





07: Concerns and Challenge

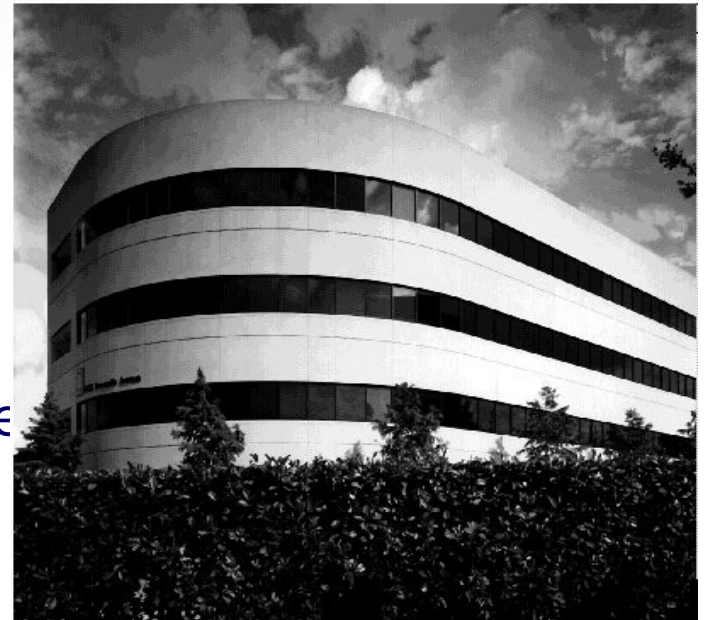
- **Naval losses secondary to:**
 - **Obesity;**
 - Musculoskeletal Injury;
 - PRT failures.
- **Goal:**
 - ▢ ↓ Lost duty days;
 - ▢ ↓ Separations for obesity/poor fitness;
 - ▢ ↑ Fitness and performance of sailors.
- **Tasking** to Navy SG for a six-month demonstration project.
- **CHAMP** developed project approach





On the Path to a DoD HPO Clearinghouse

- **HPO Cornerstone**
- **Clearinghouse Funding?**
 - Requires “Big DoD” involvement
 - Integrated approach should include multiple funding organizations
 - Funding request for Clearinghouse not included in CHAMP POM
- **Health Affairs meeting
17 April 2008**





Briefings

■ Conducted:

- Dr. Casscells, HA
- Dr. Rice, USUHS
- ADM Walsh, VCNO
- ADM Robinson, SG
- LTG Kearney
- MG Weightman
- BG Volpe

■ To be scheduled:

- GEN Sutton
- LTG Eric Schoonmaker





Joint Service, Multi-disciplinary Approach to HPO

- **Yield** long-term savings
- **Align** diverse, hard to find resources
- **Reduce** redundant HPO efforts
- **Improve** human weapon's ability to accomplish the mission



“Taking Care of the Warfighter”



- **Translate and integrate** the best scientific research in military and civilian sectors
- **Translate** basic science to tip of the spear and deckplate, as well as USUHS curriculum

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Feedback, Comments, & Questions?